

REMARKS

Claims 1, 2, 5 – 7, and 10 - 16 are now present in this application. Claims 1 and 11 are independent.

By this response, claims 1, 2, 5 – 7, and 10 are amended, claims 3, 4, 8, and 9 are cancelled, and claims 11 – 16 are added. Reconsideration of this application, as amended, is respectfully requested.

Claim Objections

The Examiner has objected to claims 3, 8, and 10 because of several informalities. In order to overcome this objection, Applicants have amended claims 3, 8, and 10 in order to correct the deficiencies pointed out by the Examiner. Reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 1 - 9 stand rejected under 35 U.S.C. § 112, 2nd Paragraph. This rejection is respectfully traversed.

The Office Action rejects claims 1 – 9 as allegedly unclear on the basis that claims 1 – 4, 8, and 9 are drawn to a method but do not appear to recite any method steps. Applicants hereby present amendments to claims 1, 2, 5 – 7, and 10, as well as new claim 11, to clearly separate the claims into method claims and apparatus claims.

The Office Action also rejects claims 1 and 5 for use of the term “anorganic.” Applicants hereby amend claim 1 use the term “inorganic” instead of “anorganic.”

At least in view of the above, Applicants respectfully submit that the presently pending claims now meet the requirements of 35 U.S.C. §112, second paragraph. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1 - 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,816,498 to Smith ("Smith") in view of U.S. Patent 6,173,527 to Pryor ("Pryor") and U.S. Patent 5,213,759 to Castenberg ("Castenberg"). Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Prior Art

Smith discloses a method and an apparatus for spraying ozonated water on plants to treat bacterial, fungal and viral diseases. The apparatus comprises a water tank (140), an oxygen generator (110), an electricity generator, an ozone generator (115) for producing ozone gas, a venturi-injector (125) and a pump (165) for mixing the ozone gas with the water, a tractor for transporting the apparatus and spray booms (210) with spray heads (220). The ozone content in the water tank (140) is constantly monitored and if necessary, the water is directed from the water tank (140) to the venturi-injector (125) for enrichment with ozone. The ozone content is approximately in the range of 0.1 to 0.4 ppm. In contrast to the invention, there is no UV-irradiation and no wetting with an inorganic wetting agent described. Further, the use of dipole-electric air-jet spray-technology is not disclosed.

Pryor describes a method of treatment of agricultural top soil with ozone containing gas to increase the growth of plants in the top soil. The ozone gas may be injected into the top soil with a carrier gas like for example CO₂. There is the possibility that the top soil is oversaturated with water preliminary to the ozone treatment. After the oversaturation with water, the soil may also be partially dried before starting the ozone treatment. In contrast to the invention, there is no UV-treatment and no use of an inorganic wetting agent or use of dipole-electric air-jet spray-technology disclosed. Additionally, the use of ozonated water ozone is explicitly described as being disadvantageous.

Castberg discloses a method of sterilization which comprises subjecting micro-organisms to UV radiation through an atmosphere of an inert gas or an atmosphere of ozone gas. The inert gas is specified as nitrogen, argon, helium, neon, krypton or xenon. In the context of the prior art,

carbon dioxide is mentioned as inert gas as well. Furthermore, in the context of the prior art, it is mentioned that ozonated washing water may be used together with UV radiation. In contrast to the invention, there is no method for the protection of plants described. Furthermore, neither the wetting with an inorganic wetting agent nor the use of dipole-electric air-jet spray-technology is described.

Claim 1

Independent claim 1 pertains to a “method for the protection of crops to control attacks of fungus, yeast, bacteria, virus and insects, the method comprising: a first step of wetting plants with an inorganic wetting agent by means of dipole- electrical air jet spray-technology; and first irradiating said plants with UV-C light; a second step of spraying said plants with ozonated water by means of said dipole- electrical air jet spray-technology; and second irradiating said plants with UV-C light.”

Pryor describes a treatment of soil with ozone subsequent to an oversaturation of the soil with water. It is explicitly mentioned that a treatment with ozone gas is advantageous compared to a treatment with ozonated water. Additionally, according to Pryor, the soil is in the first step oversaturated with water and not just wetted. Smith suggests the use of ozonated water in the spraying step of claim 1 and Castberg suggests combining the ozonated water with UV radiation.

None of the references, however, taken either alone or in combination (assuming the references may be combined, which Applicants do not admit) teach or suggest dipole electric air jet spray technology nor the use of an inorganic wetting agent during the wetting step of claim 1.

With respect to dipole electric air jet spray technology, Pryor teaches oversaturation of soil with water. One of ordinary skill in the art would not use electrostatic spray nozzles of any kind for such an endeavor and would instead use large nozzles meant to supply massive amounts of water. Pryor’s technique of irrigating the topsoil is therefore inapplicable to systems using mist spraying techniques because of the differences in spray type and spray effect.

Additionally, none of the references teach or suggest the use of ozonated water in combination with UV radiation as recited in the spraying and second irradiating steps of claim 1.

Applicants therefore respectfully submit that one of ordinary skill in the art would not arrive at the method of independent claim 1 by considering Pryor or any other reference either alone or in combination (assuming the references may be combined, which Applicants do not admit). Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Dependent Claims

Applicants respectfully submit that claims 2, 5 – 7 and 10 are allowable at least by virtue of their dependency from independent claim 1. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

New Claims

Applicants respectfully submit that new claims 11 - 17 are allowable for at least the same reasons as set forth with respect to independent claim 1. None of the references discuss or otherwise suggest dipole electric air jet spray technology as required by claim 11 and all claims depending therefrom.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

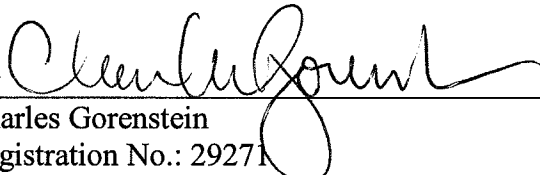
In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Naphtali Y. Matlis, Registration No. 61592 at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

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